

# Greening

## homes

> It actually costs much less to reduce your carbon footprint, debunking the myth that greening homes is expensive business.

BY RUBINI KAMALAKARAN

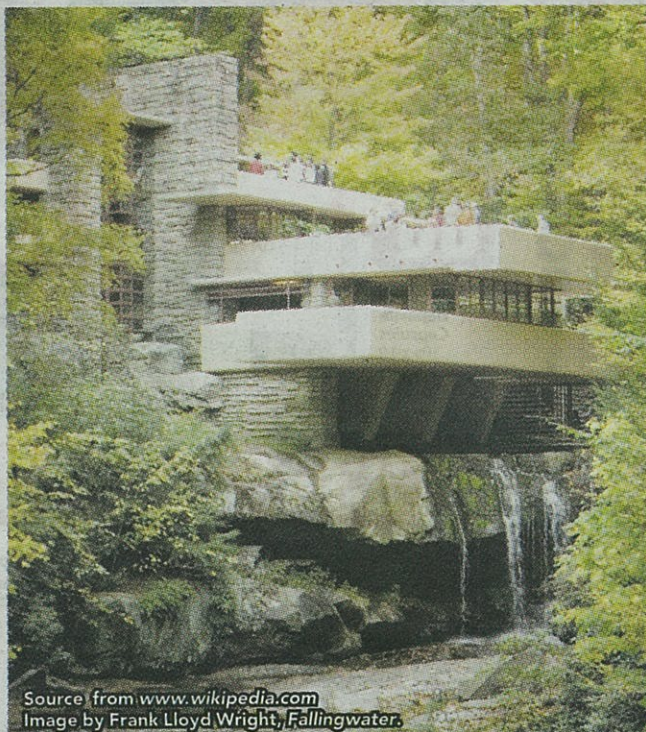
THE origin of the green building concept is unclear. There are reports that it emerged in the 70s, but did it really? One of the most famous green homes in the world, Fallingwater, was designed and constructed between 1936 and 1939 by architect Frank Lloyd Wright.

The home, partly built over a waterfall in rural southwestern Pennsylvania introduced the concept of organic architecture. Pioneered by Wright, organic architecture is a philosophy which promotes harmony between human habitation and the natural world through design. It encourages full integration with the location, so that building, furnishing and surrounding become part of a unified, interrelated composition. Many considered Wright a pioneer in the field of sustainable architecture due to Fallingwater, but there's debate that it has been around forever. It's likely that the concept was already in practice before anyone put a label on it.

### GREEN ERA

One thing is for sure, there has been a surge in green architecture over the last few years. Spearheaded by the alarming effects of global warming, the construction/building industry, together with architects and engineers, has taken responsibility in looking at improving their practices to minimise its carbon footprint.

Besides green architects like Malaysia's own Ken Yeang, widely respected in the field for his unique green design, there are several official green rating tools to guide the design and construction of a green building. In the UK, the green building rating system is called Building Research Establishment Assessment Method (BREEAM), while the US' is known as Leadership in Energy and Environmental Design (LEED). In Malaysia, Green Building Index (GBI) is the industry recognised green rating tool, designed specifically for the tropical climate (hot and humid) and



Source: from www.wikipedia.com  
Image by Frank Lloyd Wright, Fallingwater.

according to Malaysia's current social, infrastructure and economic development. It promotes sustainability in the built environment and raises awareness among developers, architects, engineers, planners, designers, contractors and the public, about environmental issues and our responsibility to future generations. The GBI rating tool provides guidelines to construct green, sustainable buildings that can save energy and water, provide a healthier indoor environment, and better connectivity to public transport. It also adopts methods of recycling and greenery and reduces impact on the environment.

### WHAT IS A 'GREEN' HOME?

A green home, like any green building increases the efficiency of resource use such as energy, water and materials. It also reduces the building impact on human health and the environment during the building's lifecycle, through better sitting, design, construction, operation, maintenance and removal. Essentially it would be designed to reduce the overall impact of the built

and linkage. How one's home tackles these issues, will determine how green it is.

The GBI certification is divided into four categories. The minimum is a general 'certified' rating, followed by silver, gold and platinum. "The highest score is 100 points but nobody can score that high because it really depends on your building. For instance, if you have a bungalow but it is located in a remote area that doesn't offer public transport, you can't acquire points for accessibility. However, you may score on landscaping due to the ample grounds around your property. It's an advantage that a house in the city may not have. So it's a combination of criteria and ultimately, the total points that will determine if you are at least certified." To achieve 'certified' status, it is not as difficult as one might think. To be 'certified', one would have to score between 50 to 65 points. Small steps such as complying with the country's by laws when constructing your home could easily score you half the points. "We actually encourage baby steps. With a little more effort, the remainder points can be achieved. Focus on low hanging fruits like composting, using recycle material, incorporating water body, etc.," states Michael Ching, a board member of Malaysia Green Building Confederation.

### SIMPLE STEPS TO A GREENER HOME

There are several simple criteria that can help to green your home, whether existing or to be constructed. "Based on our residential rating tool, we emphasise on insulation, ventilation and lighting. We call it passive design. The standard design of a terrace house goes back to the industrial revolution. Although these days, it's nicer looking, prosperous in size and material but the general problems remain the same."

### TIPS TO GREEN YOUR HOME

- ▶ **Bamboo flooring** - Bamboo is considered an environmentally friendly alternative to hardwood floors. It is strong, durable and a highly renewable material.
- ▶ **Use healthier paint** - Conventional paints contain solvents, toxic metals and volatile organic compounds (VOCs) that affects indoor air quality and causes ozone pollution. The hazardous compounds released into the air while you paint, as it dries, and even after it is completely dry, can lead to health problems. Opt for zero- or low-VOC paint.
- ▶ **Isolate fridge** - If the fridge is next to an appliance that produces a lot of heat i.e. stove or dishwasher, it will have to use more energy to keep cool. So, keep the fridge isolated and save on your electricity bill.
- ▶ **Insulate home** - On average, 1/2 of your home's heating and cooling will escape through walls (35%), windows (25%), flooring (15%) and roofing (25%). Determine where insulation is needed and patch up appliances in the right location.
- ▶ **Transform roof** - Change your roof to either white/reflective materials or green roofs. Dark colored roofs absorb the sun's energy which leads to heat gain. By reflecting the sun's rays with white roofs, you can lower the temperature of your house and save on air-conditioning.

### HEAT GAIN

One of the biggest issues in Malaysia is the heat gain during the day. To maintain comfort levels, most homes rely on air conditioning which consumes too much energy. The solution is to insulate the home. Depending on the type of home i.e. landed, mid rise or high rise, one can determine where the heat comes through. For a one or two-storey home, 50% to 75% of the heat actually comes in through the roof. "So assuming, you're staying on landed property, look into insulating your roof. The whole idea is to reduce the heat gain, thus minimising the need for air-conditioning. This is one of the most important aspects. Our green rating tools emphasise on non-air conditioned spaces."

### CROSS VENTILATION

This is when cool air from outside enters the home while warm air is released through a window or door. One of the easiest ways to promote cool air coming in from the outside is by having lots of greens and water features surrounding the home. If the home is not constructed yet or is being renovated, determine which direction the wind blows at different times of the day. Work with the contractor to place windows in strategic locations that can ensure air circulation throughout the house.

### ENERGY EFFICIENT APPLIANCES

Home appliances namely air-conditioning, refrigerators, fan and television come with star rating that determines its energy efficiency. Air-conditioning is said to consume the most energy in a household, followed by refrigerators. By using the highest star rated appliances, one is already on the way to greening their home. Replacing light bulbs to energy efficient

lighting also reduces energy consumption.

### CONSERVING WATER

By changing water inlets and fittings to that which is water efficient. Rainwater harvesting is another simple way to save water. Simply channel the water from the roof to a designated area where it is filtered. The water can be used to irrigate the garden, wash the car and so on.

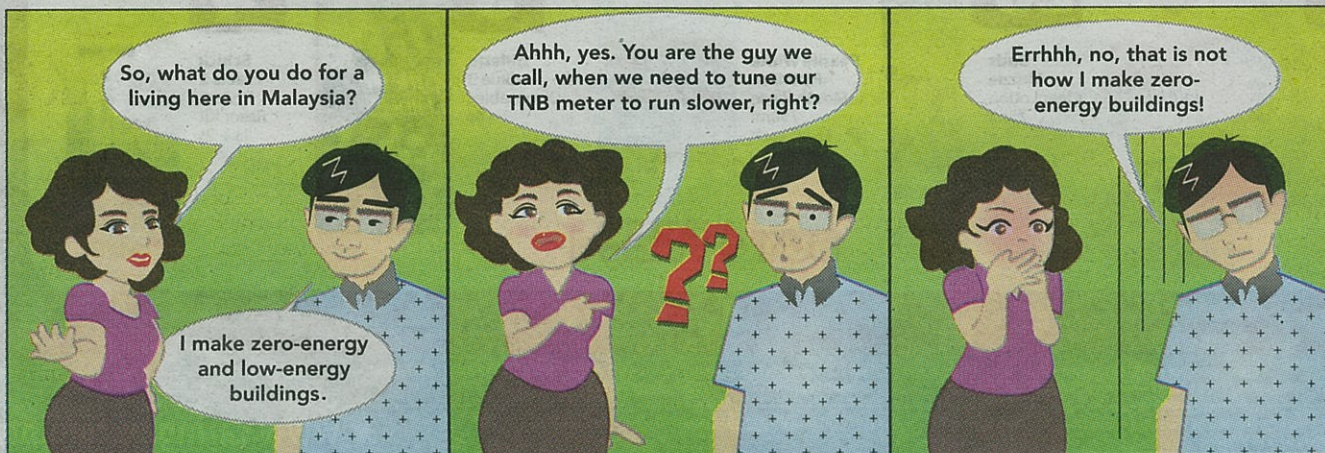
### INNOVATION

The perception that it is expensive to green a home is not true. It all falls down on the architect in designing innovatively. "One example is,.... if you can remember in the 70s and 80s, when we actually had the water tank on top of our roof, exposed. You can actually shower at 8pm and the water is still pretty warm. Of course as the years went by, for aesthetic reasons, it was hidden away under the roof. You need electricity to heat the water now. So it's a matter of whether the architect is innovative enough to place the water tank in a strategic location. There are so many instances such as this."

### TOWARDS VISION 2020

In 2009, during the United Nations Climate Change Conference, Prime Minister Datuk Seri Najib Tun Razak pledged that by 2020 Malaysia will reduce its carbon emissions by up to 40 per cent.\* If that were to be realised, all the buildings in existence today would have to be greened. At least we're on the right track. Even though, it is not mandatory for buildings to be certified green in Malaysia, GBI has already certified 60 million square feet, so far. It aims to achieve 100 million square feet soon.

[Note: The pledge was on condition that Malaysia received the transfer of technology and adequate financing from the developed world.]



Courtesy of Gregers Reimann/IEN Consultants Sdn Bhd / Illustration by Rachel Chen Ruiqi

▶ Please email your queries to us: [propertyqs@thesundaily.com](mailto:propertyqs@thesundaily.com)